THE QUALITATIVE TRADITION: A COMPLIMENTARY PARADIGM FOR RESEARCH IN ECONOMIC EDUCATION

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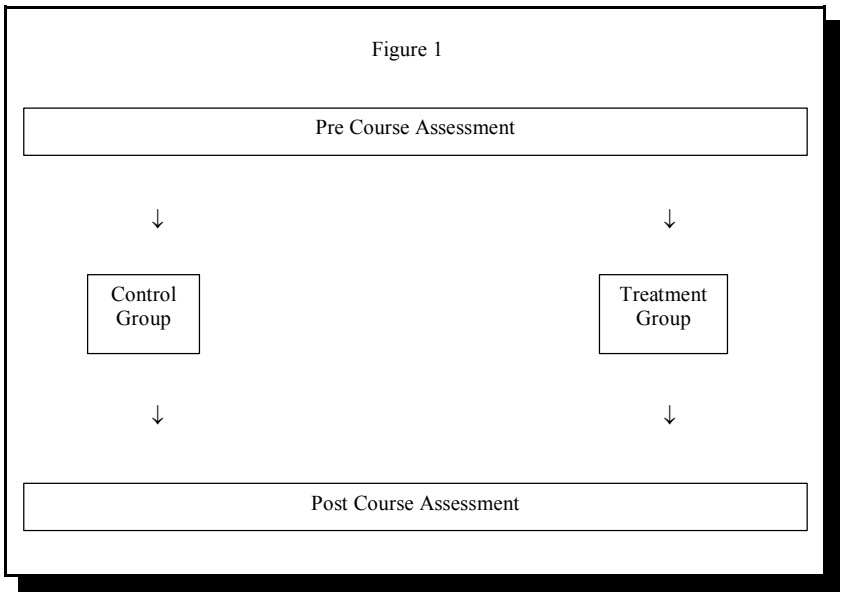
ABSTRACT

The qualitative tradition provides an alternative approach to investigate complex research and help augment the existing research about economic education. This study presents the underlying assumptions and methods for both quantitative and qualitative traditions and compares and contrasts the major differences between the two paradigms. Validity issues are addressed, and the article ends with a discussion on how qualitative research would compliment the existing literature in economic education. Quantitative research, based on deductive reasoning, start with the postulates in the researcher's mind. The researcher's pre-conceptions may cause her or him to overlook significant variables within the phenomenon. Qualitative research is able to overcome this quantitative difficulty by starting the research process with the participants. Through data collection and inductive reasoning, the qualitative researcher can develop testable hypotheses that were previously overlooked by traditional quantitative methods.

INTRODUCTION

Much of the research in economic education focuses on student performance and attitudes with the goal of improving teaching effectiveness and student learning. A framework often utilized is the input/output production model where student performance or attitudes is the dependent variable (see Figure 1). In this framework, a pre-course assessment is given.

Then students are divided between a control group and a treatment group. The treatment group receives the new pedagogical method. A post-course assessment is given when the course is finished. Teacher and student related variables are the explanatory variables in this model, along with effort to control for exogenous influences. Over the past two decades numerous studies have been conducted using either the TUCE (Test of College Economics) or the TEL (Test of Economic Literacy) scores as a proxy for student performance.[1] Numerous studies using TUCE or TEL scores in this input/output framework have been conducted to test new pedagogical techniques and their results have been published.[2] There is concern that the marginal impact of additional studies using the TUCE to test for significant variables in student learning has become trivial.[3]



For research purposes, in any classroom there are student-controlled variables, teacher-controlled variables, and any number of variables that are exogenous including: each student's opportunity cost, the teacher's opportunity cost, and the fit between the instructor's teaching style and each

student's learning style. The list of possible significant exogenous variables is infinite. One of the problems with the TUCE input/output framework is that the model has no power to investigate exogenous variables. For example, the input/output model has no way to control for a tragedy that occurs in the life of a student during the course of study.

Another problem with the input/output framework, like all models, is that the model is based on assumptions. The input/output framework assumes that participants desire to maximize their assessment scores. If instead, participants are targeting a passing grade rather than the highest possible score, the quantitative analysis used in the model will produce insignificant results.

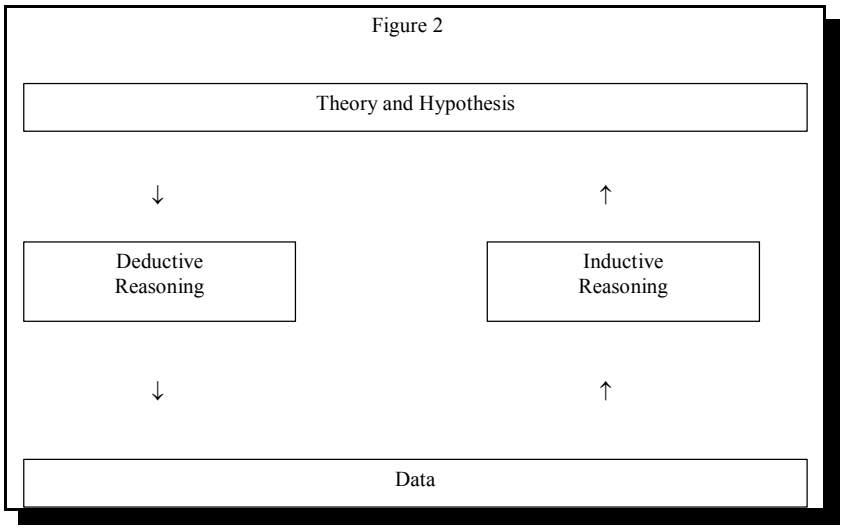
A new method of modeling is needed to investigate variables that are exogenous to the traditional input/output framework. The purpose of this paper is to present an alternative paradigm that is able to examine variables that are exogenous to traditional quantitative research in economic education, namely qualitative research methods. The qualitative tradition uses methods that would compliment the existing quantitative results and provide a new approach to solving issues that traditional methods of research in economic education have not yet been able to address.

This study presents the underlying assumptions and methods for both quantitative and qualitative traditions and will compare and contrast the major differences between the two paradigms. Validity issues will be addressed, and the article ends with a discussion on how qualitative research would compliment the existing literature in economic education.

QUANTITATIVE RESEARCH

The quantitative research tradition is based on deductive reasoning (see Figure 2).[4] A postulate is set a priori, and data is gathered to test the validity of the hypothesis. The method includes data collection and organization into quantifiable variables, the use of statistics as proxies for population parameters, and deliberate control for outside influences.

Figure 2



The methods used in quantitative research are built on five underlying assumptions that are distinctive from the assumptions of qualitative tradition. First, quantitative research assumes an objective social reality. Consequently, researcher can be detached from research participants and their setting.

Second, researchers are able to suspend their values and conduct research through a positive, rather than normative, approach. Causal relationships among social phenomena can be viewed from an objective, detached, and mechanical perspective. These first two assumptions allow the researcher to superimpose a priori a theoretical framework on the study.

Third, social phenomena are real only if they are observable. Knowledge is legitimized through research and testable hypotheses. If social behavior is not observable, than it is not quantifiable. For behavior that is not quantifiable, the validity of a claim cannot be tested, and it remains only an idea rather than knowledge.

Fourth, quantitative research assumes social reality is relatively constant and across time and space. Therefore, representative samples can be drawn from a population.

Finally, social realities can be organized as variables and analyzed through the use of statistical methods. Since the samples are adequately representation of the entire population, it is assumed that findings can be generalized as pertaining to the defined population.

QUALITATIVE RESEARCH

The qualitative tradition is based on inductive reasoning (see Figure 2). No hypotheses are set a priori. Data are gathered and examined, and theories are built on evidence extrapolated from the data. In this tradition, researchers study naturally occurring phenomena in all their complexities.[5] In the case of research in economic education, the classroom is a naturally occurring phenomenon in which research is conducted.

In conducting this type of research, the qualitative tradition is based on four assumptions. First, qualitative research assumes the participants construct social reality within each phenomenon. Also social reality is continuously constructed in local situations.

Second, the qualitative tradition assumes human intentions play a major roll in explaining causal relationships within social phenomena. Both the actions and values of the participants shape the phenomenon. Qualitative research allows for both objectivity and subjectivity on behalf of the participants.

Third, it is assumed by qualitative researchers, that they must become personally involved in the phenomena with the research participants, including sharing perspectives and assuming a caring attitude. Trust must first be established for qualitative interviews to result in open and honest communication.

Finally, qualitative research assumes that new concepts and theories can be discovered after data have been collected. Variables are not pre-determined. Rather, they result from reoccurring patterns in the data.

The goal of qualitative tradition is to understand natural occurring phenomena with all of their complexities. The researcher continuously collects data to understand a particular phenomenon. Data collection includes field notes of the researcher's observations, individual and group

interviews of participants, videotaping of the phenomenon (for example, an economics class), and journaling based on reflection.

To be effective, the researcher must indwell both the study's participants and himself or herself. Indwelling allows the researcher to observe the behavior in the phenomenon most relevant to the problem being pursued. The researcher indwells the subjects by living with them in the phenomenon. In the case of economic education, this would include attending class with the students and observing them as they study. The researcher indwells himself or herself though reflecting deeply on the subject and developing theories through internalizing the phenomenon and using inductive reasoning.

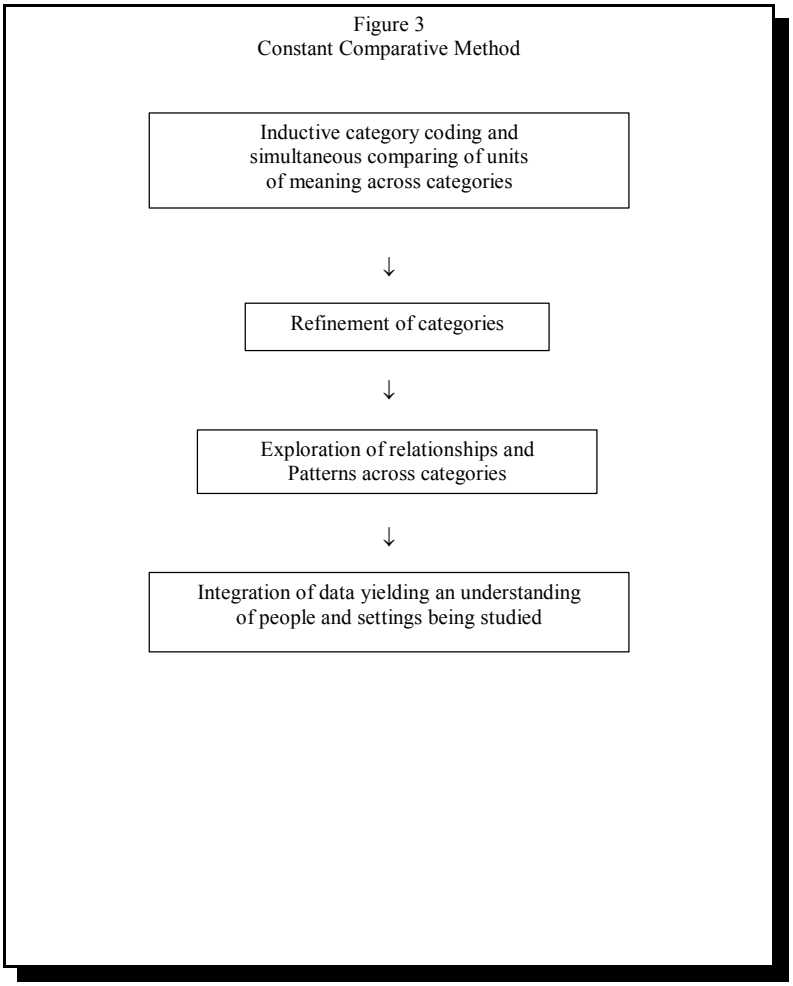
QUALITATIVE RESEARCH METHODOLOGY

Qualitative research begins with the researcher selecting a focus of inquiry. In the case of economic education, it may be the experience of college students in a principles level economics course. At this point, like the quantitative tradition, the researcher conducts a review of the literature for relevant studies. Next the researcher selects a sample to study. Unlike the quantitative tradition, after selecting the sample, the researcher starts building relationships with the participants of the phenomenon. Qualitative researchers actively seek to minimize differences between themselves and the participants of the study. This includes, but is not limited to, spending time with the participants, building friendships, and gaining their trust. After trust has been established, the researcher interviews each participant, and records the interview either by audio- or videotape. For each interview, the researcher starts with open-ended questions. The interviewer allows participants to take control of which direction their answers lead. With each answer, the researcher continues to ask open-ended questions. But overall the researcher determines the focus of inquiry. If the interview drifts too far on a tangent, the researcher guides the interview back to the intended focus. After each interview, the entire conversation is transcribed, word for word. The interview process is repeated for each participant in the phenomenon.

The transcriptions are then analyzed. One widely used method of

analysis is the Constant Comparative method (See Figure 3).[6] The Constant Comparative Method of analyzing qualitative data combines inductively coding data into broad categories with a simultaneous comparison of all units of meaning obtained (Glaser and Strauss, 1967).

Figure 3
Constant Comparative Method



The Constant Comparative Method involves coding data by category, and looking for patterns both within and across manuscripts.[7] Once patterns

are recognized, the phenomenon is revisited, and more data is collected to better define these patterns and theories. After analyzing the new data, categories are redefined as new patterns immerge or the original organization of words, themes, and topics are reconfirmed. From these reconfirmed patterns, the qualitative researcher then develops theories about the phenomenon.[8],[9] The theories that emerge through qualitative research then can be either published as a case study or research report, or used to form testable hypothesis for quantitative research. The research process ends when a point of saturation occurs. The point of saturation occurs when additional interviews yield no new information about the phenomenon.

FIVE FUNDAMENTAL DIFFERENCES BETWEEN QUALITATIVE AND QUANTITATIVE RESEARCH

(1) Quantitative research is conducted in either a natural or artificial setting where certain variables and influences can be purposely controlled. Qualitative researchers intentionally strive to do their research in the natural setting that it occurs. Also, quantitative research takes an objective, detached stance towards research participants and their setting, whereas qualitative researchers become personally involved with the research participants and immerse themselves in the research setting.

(2) Quantitative research attempts to capture social realities through quantifying behavior and looking for statistical correlations between variables. By contrast, qualitative research makes holistic observations of the institutional context within which the social interaction occurs. Qualitative research firmly believes the values are deeply embedded in social science research, and attempts to capture behavior through recorded interviews, observations, dialogs, and pictures.

(3) Quantitative research starts with pre-conceived postulates and hypotheses set a priori to determine what data will be collected. By contrast qualitative research develops theories from patterns that occur as data are analyzed. Quantitative is based on the deductive

reasoning process, and contributes to knowledge through the validation of postulates, whereas qualitative uses inductive reasoning, and contributes through uncovering new postulates and theories. Qualitative researchers have issues with using a priori null hypotheses to begin the research process since the values of the researcher determine the questions and answers that will be studied, and overlook variables that significantly affect the phenomenon.

(4) Quantitative research, through random sampling, seeks participants or observations to be as homogenous as possible to control for heterogeneous sample problems. Differences within a sample cause statistical problems including heteroskedasticity of the residuals. By contrast, qualitative studies, though purposeful sampling, are strengthened by diversity among participants within a focus of inquiry. Diversity broadens the breath of perspectives and understanding within the social phenomenon. For qualitative studies, the saturation point occurs when additional interviews yield no new information about a social phenomenon. Thus, phenomenon containing diverse populations is beneficial to broaden the breadth of perspectives.

(5) Quantitative research, based on statistical representation of population parameters, assumes that research results can be generalized to the population. Qualitative research examines data and develops theories within a specific focus of inquiry, but makes no claim to generalize result beyond the specific context of the phenomenon.[10] The qualitative tradition makes no claim to generalize results to a larger population.[11]

VALIDITY ISSUES

The quantitative tradition relies on surveys and tests as instruments. The tradition has a two-part approach to establishing research validity. First, the researcher appeals to the properties of the instruments in terms of reliability and validity.[12] Second, the researcher uses statistical modeling

techniques that do not violate any of the assumptions of the sampling distribution.[13]

By contrast the qualitative tradition uses people and their words as instruments.[14] Humans-as-instruments means persons, with all of her or his own experiences, skills, and biases affect each participant's behavior within the phenomena. Lincoln and Guba (1985) argue that humans-as-instruments is a more holistic approach to the dynamics of social phenomena than quantitative instruments. Humans-as-instruments allows for participants' interpretations within the phenomenon. What people do and say reflects how they interpret both their world and the phenomenon.[15]

Traditionally for the qualitative tradition, the criteria for judging the adequacy of research have been trustworthiness and usefulness of the phenomenological study (Maykut and Morehouse 1994).[16] In the last decade the qualitative tradition has turned to measurement validity to address validity issues within qualitative research (Adcock and Collier 2001). Evidence for measurement validity for both quantitative and qualitative research is demonstrated through construct, criterion, and construct validity.

For any branch of research, whether qualitative or quantitative research is conducted, there are four levels of conceptualization according to Adcock and Collier (2001).

Level 1: *Background Concept*-the meaning(s) given to a concept outside the research community by society as a whole.

Level 2: *Systemized Concept*-the concept as defined within a research community.

Level 3: *Indicators*-measures of the systemized concept used within the research community. For quantitative research, this includes the numerical scoring of the data. For qualitative research, this includes the coding of the transcripts.

Level 4: *Research Scores*-the actual indicator scores generated by a particular study.

For establishing the measurement validity of any study, content validity assesses the degree to which the indicators (level 3) of the instrument

represent the systemized concepts (level 2) established by previous studies within the research community.

Criterion related validity assesses whether the scores produced by the indicators (level 3) are empirically associated with the scores for other variables, called criterion variables, which are considered direct measures of the phenomenon being studied.

Construct validity assesses whether a given indicator (level 3) is associated with other indicators (level 3) in away that conforms to the theoretical expectations about their interrelationship. In both traditions, evidence for validity can be demonstrated through content, criterion, and construct validity.

HOW QUALITATIVE STUDIES WOULD COMPLIMENT THE EXISTING BODY OF RESEARCH

Quantitative research, based on deductive reasoning, starts with the researcher. More precisely, it begins with the postulates in the researcher's mind. A timeless obstacle faced within the quantitative tradition is that the postulates the researcher stipulates a priori are not necessarily the dynamics that are driving the investigated phenomenon. The researcher's pre-conceptions may cause her or him to overlook significant variables within the phenomenon.

Qualitative research is able to overcome this quantitative difficulty by starting the research process with the participants. By setting no hypothesis a priori, the qualitative researcher begins instead with open-ended questions. Through allowing participants, who create the phenomenon, to explain which influences are significant, the qualitative researcher is able to investigate variables that are exogenous to quantitative models.

Through data collection and inductive reasoning, the quantitative researcher can develop testable hypotheses that were previously overlooked by traditional quantitative methods.

Qualitative studies provide an alternative approach to investigate complex research and help augment the existing research about economic education.

ENDNOTES

1. *The Test of Understanding of College Economics* 3rd edition by Philip Saunders. *Test of Economic Literacy* 3rd edition by William Walstad and Ken Rebeck.

2. According to Saunders and Walstad, as of 1989, approximately 250 research studies had been published on the topic of teaching college economics. A 1979 study John Sigfried and Rendig Fels appeared in the Journal of Economic Literature surveying 179 published articles on the topic of research in economic education.

3. To Quote Saunders and Walstad: "Why has there been such a precipitous decline in reported research findings? Several possibilities come to mind. First, the easy questions naturally were addressed first. As the most important questions are answered and as the remaining become ever more difficult, fewer potential research efforts yield a positive expected net present value" page 272.

4. The quantitative research tradition has been referred to as the positivist approach.

5. Michael Polanyi (1962, 1967) articulates the phenomenological position at length.

6. See Glause and Strauss (1967). See also Lincoln and Gruba for additional procedural information on the Constant Comparative method. Figure 3 is taken from Figure 9.4 on page 135 of Maykut and Morehouse (1994).

7. The qualitative researcher is looking for patterns across people's words, actions, and documents.

8. Computer programs are available to assist with analysis, including EthnographTM and LISQUALTM.

9. Also anomalies are discovered that do not fit the current theories related to the phenomenon. Further analysis of these anomalies can both call into question current theory and result in new directions for research to be pursued.

10. To quote Maykut and Morehouse: "One can further state that for the qualitative researcher, the person or event can only be understood within the context or background. The person that emerges out of the context is not a universal person or event, but rather a contextual person or event" page 33.

11. For researchers desiring to generalize results for studies within the qualitative tradition, making results generalizable is possible through conducting a meta analysis across studies.

12. Evidence for reliability is established through split-half reliability and test-retest reliability. A coefficient alpha is often used to provide evidence for split-half reliability. Evidence for validity is established through demonstrating the content, construct, and criterion related properties of the instrument.

13. Often the normal distribution is the assumed sampling distribution.

14. The qualitative tradition assumes human behavior is too complex to be captured in a one-dimensional instrument.

15. Addressing interpretations in the phenomenon may shed light on student behavior in the economics classroom including academic performance.

16. Given the recent debacles of the stock market including misreporting by Enron, World Com, and Xerox, trustworthiness needs to be a criterion for judging manuscripts in both research traditions.

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